DESCRIPTION
The new NEXEM EU2 series is PC-board mount type and suitable for various motor and solenoid controls application in the automobiles which require high quality and high performance.

The EU2 series is the ultra low profile SMD relay. The EU2 series is succeeding in about 75% of low profiling in comparison with the ET2 series which is low profile type. And it's basic characteristics are same as the EX2 series which is miniature and high performance.

FEATURE
• Twin type (Two relays in one housing)
• SMD
• Low profile (Approx. 75% relay height of ET2, Approx. 57% relay height of EX2)
• Light weight (Approx. 80% relay weight of ET2, Approx. 94% relay weight of EX2)
• Pb free
• Tape & Reel packaging

APPLICATION
• Motor control
• Solenoid control

For Proper Use of Miniature Relays DO NOT EXCEED MAXIMUM RATING
Do not use relay under excessive conditions such as over ambient temperature, over voltage and over current. Incorrect use could result in abnormal heating and damage to the relay or other parts.

READ CAUTIONS IN THE SELECTION GUIDE
Read the cautions described in EM Devices’ "Miniature Relays" (9600RSGVOL11E1003N1) before dose designing your relay applications.

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## EU2 SERIES

### SPECIFICATIONS

(Ambient temperature: 20°C)

<table>
<thead>
<tr>
<th>Items</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Form</td>
<td>1 Form C x 2 (separate)</td>
</tr>
<tr>
<td><strong>Contact Ratings</strong></td>
<td></td>
</tr>
<tr>
<td>Maximum Switching Voltage</td>
<td>16VDC</td>
</tr>
<tr>
<td>Maximum Switching Current</td>
<td>30 A</td>
</tr>
<tr>
<td>Minimum Switching Current</td>
<td>1A (5VDC)</td>
</tr>
<tr>
<td>Maximum Carrying Current</td>
<td>25A (10 minutes Max., Coil Voltage 14VDC)</td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>4mΩ typical (measured at 7A) initial</td>
</tr>
<tr>
<td>Contact Material</td>
<td>Silver oxide complex alloy</td>
</tr>
<tr>
<td>Operate Time (Excluding bounce)</td>
<td>2.5 ms typical (at Nominal Voltage)</td>
</tr>
<tr>
<td>Release Time (Excluding bounce)</td>
<td>3ms typical (at Nominal Voltage, with diode) initial</td>
</tr>
<tr>
<td>Nominal Operating Power</td>
<td>960mW</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>100MΩ at 500 VDC</td>
</tr>
<tr>
<td>Withstand Voltage</td>
<td></td>
</tr>
<tr>
<td>Between open contacts</td>
<td>500 VAC min. (for 1 minute)</td>
</tr>
<tr>
<td>Between coil and contacts</td>
<td>500 VAC min. (for 1 minute)</td>
</tr>
<tr>
<td>Shock Resistance</td>
<td></td>
</tr>
<tr>
<td>Misoperation</td>
<td>98 m/s² (10G)</td>
</tr>
<tr>
<td>Destructive Failure</td>
<td>980 m/s² (100G)</td>
</tr>
<tr>
<td>Vibration Resistance</td>
<td></td>
</tr>
<tr>
<td>Misoperation</td>
<td>10 to 300Hz, 43m/s² (4.4G)</td>
</tr>
<tr>
<td>Destructive Failure</td>
<td>10 to 500Hz, 43m/s² (4.4G), 200hours</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>−40 to +85°C</td>
</tr>
<tr>
<td><strong>Running Specifications</strong></td>
<td></td>
</tr>
<tr>
<td>Non-load</td>
<td>1 x 10⁶ operations</td>
</tr>
<tr>
<td>Load</td>
<td>100 x 10⁶ operations (at 14VDC, Motor Load 25A)</td>
</tr>
<tr>
<td></td>
<td>100 x 10⁶ operations (at 14VDC, Motor Load 25A/7A)</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 6g</td>
</tr>
</tbody>
</table>

*1 Mounted on PC-board: FR-4 (Thickness: 1.6mm), Copper (Thickness: 105 μm, Width: 10mm, Length: 40mm)

### COIL RATING

(Ambient temperature: 20°C)

<table>
<thead>
<tr>
<th>Part Numbers</th>
<th>Nominal Voltage (VDC)</th>
<th>Coil Resistance (Ω) ± 10%</th>
<th>Must Operate Voltage*2 (VDC)</th>
<th>Must Release Voltage*2 (VDC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU2-2U1</td>
<td>12</td>
<td>150</td>
<td>6.5</td>
<td>0.6</td>
</tr>
</tbody>
</table>

*2 Test by pulse voltage

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EU2 SERIES

PART NUMBER SYSTEM

EU2 – Type
U – Packing
S – Enclosure
T – Must Operate Voltage

- Packing: Nil: Tube, T: Embossed carrying tape
- Enclosure: Nil: Unsealed, S: Sealed
- Must Operate Voltage: 1: 6.5V
- Contact Material: U: Silver oxide complex alloy
- Coil Resistance: 2: 150Ω

TECHNICAL DATA

Coil Temperature Rise

(Ambient temperature: 23°C)

Coil energized time (min.)

Coil temperature (°C)

0 5 10 15

0 50 100 150

Coil energized power (W)

0 0.5 1 1.5

0 50 100 150

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RELAY CHARACTERISTICS DISTRIBUTION (INITIAL)

Specimen : EU2-2U1S
Ambient Temperature : 20°C
Quantity : 25pcs.

Operate/Release Voltage

Contact Resistance

Coil Resistance

Operate Time

Release Time

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## ELECTRICAL LIFE TEST (14VDC-25A, P/W motor, Lock)

<table>
<thead>
<tr>
<th>Test items</th>
<th>Test conditions</th>
<th>Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Operate voltage</td>
<td>Temperature : 23°C</td>
<td>EU2-2U1S</td>
</tr>
<tr>
<td>2. Release voltage</td>
<td>Frequency : 0.1Hz (0.2s ON, 9.8s OFF)</td>
<td>10 pcs</td>
</tr>
<tr>
<td>3. Contact resistance</td>
<td>Contact load : 14VDC-25A, P/W motor, Lock</td>
<td></td>
</tr>
<tr>
<td>4. Coil resistance</td>
<td>Number of operations : 100 x 10⁷</td>
<td></td>
</tr>
<tr>
<td>5. Operate time</td>
<td>(with coil clump diode)</td>
<td></td>
</tr>
<tr>
<td>6. Release time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Test items**:
  - 1. Operate voltage
  - 2. Release voltage
  - 3. Contact resistance
  - 4. Coil resistance
  - 5. Operate time
  - 6. Release time

- **Test conditions**:
  - Temperature : 23°C
  - Frequency : 0.1Hz (0.2s ON, 9.8s OFF)
  - Contact load : 14VDC-25A, P/W motor, Lock
  - Number of operations : 100 x 10⁷

- **Samples**:
  - EU2-2U1S
  - 10 pcs

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![Graphs showing test results](image-url)

- **Graphs**:
  - Operate voltage
  - Release voltage

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